

AMENDMENTS TO THE CLAIMS

Please amend the claims as shown directly below. This listing of claims will replace all prior versions, and listings, of claims in the application

1.-20. (Cancelled)

21. (Original) A method of detecting flow from a first zone and a second zone in a multizonal well in a subterranean formation comprising the steps of:

introducing a first photoactive tracer into the first zone;

introducing a second photoactive tracer into the second zone; and

detecting the first and the second photoactive tracers in the return flow from the first and second zones.

22. (Original) The method of claim 21 wherein the first photoactive tracer and the second photoactive tracer have a different absorption or emitting wavelengths.

23. (Original) The method of claim 21 wherein the first photoactive tracer or the second photoactive tracer comprises fluorescein, rhodamine B, Nile Blue A, or acridine orange.

24. (Original) The method of claim 21 wherein the first photoactive tracer or the second photoactive tracer comprises a fluorescein gel concentrate.

25. (Original) The method of claim 21 wherein the first photoactive tracer or the second photoactive tracer comprises a tracer matrix that comprises a photoactive material and a polymeric material.

26. (Original) The method of claim 25 wherein the photoactive material comprises a fluorophore, a dye, or a pigment.

27. (Original) The method of claim 25 wherein the photoactive material comprises a fluorophore, dye, or pigment that has a blue, green, yellow, orange, orange-red, or red-far red absorption or emission spectrum.

28. (Original) The method of claim 25 wherein the polymeric material protects the photoactive material from degradation downhole.

29. (Original) The method of claim 25 wherein the polymeric material is substantially water-insoluble.

30. (Original) The method of claim 25 wherein the polymeric material comprises a latex, a polystyrene, a polyvinyl chloride, a polyester, a polyolefin, a polycarbonate, or a polybutadiene.
31. (Original) The method of claim 25 wherein the tracer matrix is covalently derivatized.
32. (Original) The method of claim 25 wherein the tracer matrix is formed by a nucleophilic substitution reaction, a hydroboration reaction, an organo-metallic bond-forming reaction, a pericyclic bond-forming reaction, or a combination of oxidation and reduction reactions.
33. (Original) The method of claim 25 wherein the tracer matrix is formed by an emulsion polymerization process.
34. (Original) The method of claim 25 wherein the tracer matrix is formed by coating the polymeric material on the photoactive material.
35. (Original) The method of claim 25 wherein the tracer matrix is formed by a swelling/shrinking process.
36. (Original) The method of claim 25 wherein the polymeric material protects about 50% to 100% of the surface area of the photoactive material.
37. (Original) The method of claim 25 wherein the photoactive material is embedded within the polymeric material.
38. (Original) The method of claim 25 wherein the tracer matrix further comprises a second photoactive material.
39. (Original) The method of claim 21 wherein detecting either the first photoactive tracer or the second photoactive tracer comprises using a UV detector, a colorimeter, or a fluorimeter.
- 40.-63. (Cancelled)